Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

Lake of the Ozarks

Waterbody Segment at a Glance:

County: Benton
Nearby Cities: Warsaw, Lakeview Heights
Area of impairment: 50 acres
Pollutants: Low Dissolved Oxygen
Gas Supersaturation
Fish Trauma
Source: Truman Dam

TMDL Priority Ranking: Medium

State map showing Lake of the Ozarks and its watershed

Description of the Problem

Beneficial uses of Lake of the Ozarks

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life
- Protection of Human Health associated with Fish Consumption
- Whole Body Contact (Swimming)
- Boating and Canoeing

Use that is impaired

- Protection of Warm Water Aquatic Life

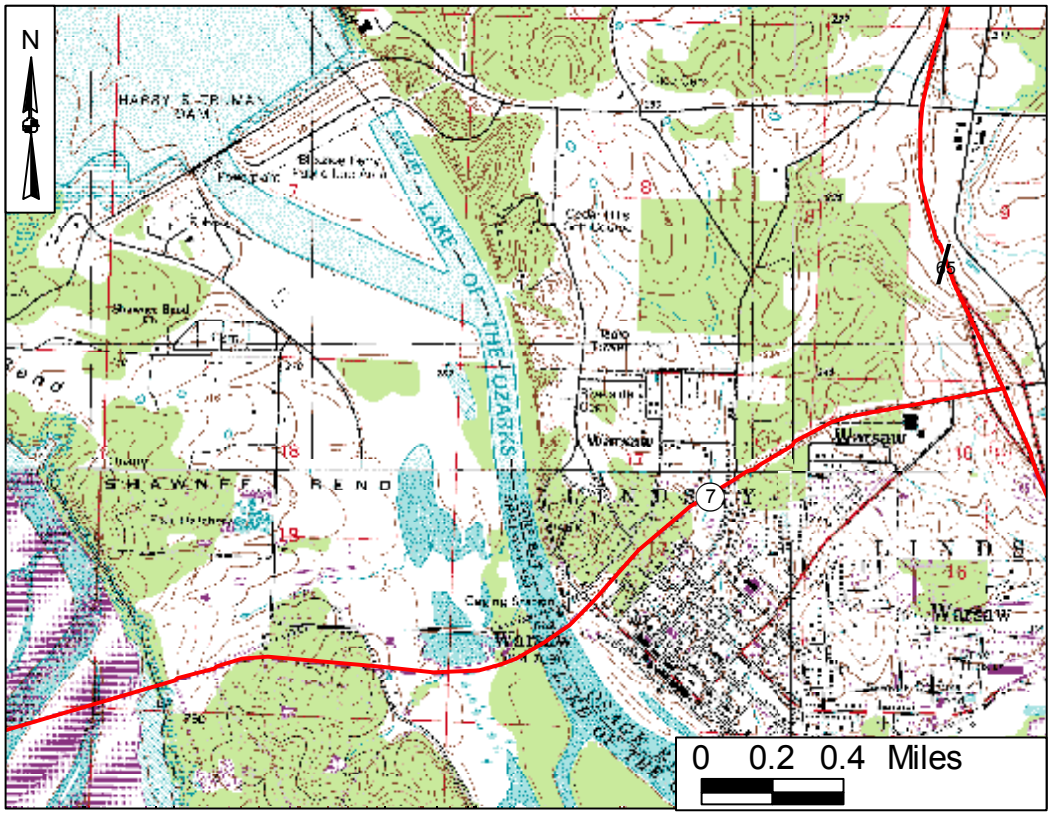
Standards that apply

- The Missouri Water Quality Standard (WQS), found in 10 CSR 20-7.031 Table A, for dissolved oxygen in streams is 5.0 mg/L (milligrams per liter or parts per million).
- General criteria in WQS are found under 10 CSR 20-7.031 (3). The criteria that apply to this situation, (D) and (G) state:
  - Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life.
  - Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community.

Use of Truman Dam for electric power generation frequently results in very high flow conditions and very turbulent water in that part of the Lake of the Ozarks just below the dam. The high flow velocities and turbulent flow can cause physical injury to fish. As water drops from Truman Dam

and plunges into Lake of the Ozarks, it brings air from the atmosphere into the water, causing atmospheric gases to become supersaturated in the water. If this condition becomes pronounced, gas bubble disease can cause serious injury or death to fish. Under other flow conditions, releases of deep de-oxygenated water from Truman Dam can result in low dissolved oxygen levels in this portion of Lake of the Ozarks.

Lake of the Ozarks at Truman Dam, Benton County, Missouri



Fish kills in Lake of the Ozarks below Truman during 1978 - 2002

Date	Duration	Cause	Number of Fish Killed	Species Killed (Abbreviated)	Value ($)
4-8-78	3 Months	Supersaturation	421,785	WAE, WHC, LMB, WHB, DRM, Sun., Gar, Shad, CAR, Cat., SPB	168,350
4-24-79	3 Months	Supersaturation	104,346	WHB, CPS, WHC, WAE, CAR, CCF, SPB, Shad, DRM, Sun.	38,084
5-12-80	3 Weeks	Physical Injury	571	PDF, Gar, DRM, Buff.	38,257
5-15-80	Unknown	Physical Injury	334	PDF, Gar, CAR, Buff.	21,696

Fish kills in Lake of the Ozarks below Truman during 1978 - 2002					
Date	**Duration**	**Cause**	**Number of Fish Killed**	**Species Killed (Abbreviated)**	**Value ($)**
8-24-80	1 Day	Dewatering Effort	508	FHC, BCF, WCF, CAR, Buff.	Unknown
7-19-81	1 Month	Supersaturation Physical Injury	1,668	WHC, CPS, PDF, BCF, Sun. Bull. LMB, DRM, Shad, CAR	2,773
7-29-81	1-2 Days	Low Dissolved Oxygen (O2)	2,149	DRM, WHB, Buff., WHC, LMB, Sun., BCF, CCF, Bull., PDF, Shad	Unknown
8-17-81	2 Days	Unknown	Unknown	WAE, LMB, PDF, BCF, CCF, Sun., Gar, Shad	Unknown
6-25-82	1 Day	Rapid Drop in Water Level	135 Or >>	WHC, SPB, CPS, CAR, Cat, Gar	Unknown
6-21-83	1 Day	Unknown	186	WHC, WAE, WHB, Hyb., PDF, Cat, Sun, DRM, Gar, Buff.	Unknown
6-23-83	1 Day	Dewatering Effort	538	Unknown	Unknown
7-6-83	1 Day	Unknown	184	WHB, Hyb., BCF, DRM, Buff.	Unknown
8-9-83	Unknown	Low Dissolved Oxygen in turbine bays.	111	WAE, WHB, SPB, Hyb., WHC, BCF, CAR, DRM, Gar, Buff., Others	1,060
6-4-86	2 Days	Low Dissolved Oxygen	175	WHB, SPB, Hyb., PDF, DRM, Cat., Gar	Unknown
5-23-88	1 Week	Low Dissolved O2/Degreasing Agent	429	WHB, BCF, PDF, Hyb., Gar, Others	Unknown
6-15-90	1 Week	Supersaturation and Low Dissolved O2	Unknown	Unknown	Unknown
8-2-93	3 Weeks	Supersaturation Physical Injury	Unknown	WHC, PDF	Unknown
4-14-94	8 Weeks	Supersaturation Physical Injury	2,078	WHC, PDF, Sun., Shad, DRM	2,434,092
5-24-02	30 days	Dam Operations	996	BLC, GZS, CAR, FHC, CCF, BCF, LMB, Hyb., Buff., PDF, DRM, Gar	140,109

Key to fish species: WAE=Walleye, WHC=White Crappie, BLC=Black Crappie, WHB=White Bass, GSF=Green Sunfish, RES=Redear Sunfish, BLG=Bluegill, GZS=Gizzard Shad, CAR=Carp, FHC=Flathead Catfish, CCF=Channel Catfish, BCF=Blue Catfish, SPB=Spotted Bass, SMB=Smallmouth Bass, LMB=Largemouth Bass, Hyb=Hybrid Striped Bass, Bull.=Bullhead Catfish, WCF=White Catfish, Buff.= Buffalo, PDF=Paddlefish, DRM=Drum, CPS=Carpsucker.

Source: Missouri Department of Conservation

For more information call or write:

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